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**Information technology – Automatic
identification and data capture
techniques – Bar code printer and
bar code reader performance testing
specification**



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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives or www.iec.ch/members_experts/refdocs).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html. In the IEC, see www.iec.ch/understanding-standards.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 31, *Automatic identification and data capture techniques*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

Introduction

Bar code printers and bar code readers are key equipment in auto-ID systems. However, manufacturers of this equipment evaluate their products' performance by their own test methods and measures, specifying this performance in their catalogues. As a result, actual performance varies, although there are some performance values that are the same across catalogues. Therefore, users are forced to test the equipment in order to find the most suitable solutions for their applications, at their own cost.

This document was developed to provide standard test and ranking methods giving users a **common ruler** to be able to evaluate performance values in selecting equipment to meet their needs.

Furthermore, this document is expected to be used in avoiding using poor quality products.

NOTE There are ISO/IEC 15419 and ISO/IEC 15423. ISO/IEC 15419 mainly specifies how to print a barcode as a digital image, so that the contents focus on software development and look like a technical suggestion with no details on how to evaluate performances of a bar code printer in total.

This document specifies more details how to test and evaluate complete printer performances including durability of printed labels.

ISO/IEC 15423 is made based on that a scanner and a decoder are separated devices, which is a quite old fashion system. Although, a combination case of a scanner and a decoder is mentioned.

This document specifies more details how to test and evaluate reader performances, which covers test items specified in ISO/IEC 15423.

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Information technology – Automatic identification and data capture techniques – Bar code printer and bar code reader performance testing specification

1 Scope

This document specifies the performance evaluation specifications of thermal transfer type printers (hereinafter referred to as bar code printers), consumables, and bar code readers (regardless of the reading method) used in bar code systems. The rank of performance is also defined by the evaluation items.

This document can be applied to the following evaluation tests by combining ISO/IEC 15416 and ISO/IEC 15415, which define the print qualities of bar code symbols.

NOTE This document is not prevented from being cited in the evaluation of thermal printers using thermal paper and printers using “plain or exclusive paper” (commercial printing, ink jet printers, electrophotographic printers, etc.).

- a) Print performance of bar code printers (including consumables)
- b) Brightness and smoothness of “reception paper or label”, and adhesion of the label
- c) Strength of reception paper or label on which the bar code is printed
- d) Reading performance of bar code readers
- e) Electrical, mechanical and environmental characteristics of bar code printers and bar code readers

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 105-A03, *Textiles — Tests for colour fastness — Part A03: Grey scale for assessing staining*

ISO 105-C06, *Textiles — Tests for colour fastness — Part C06: Colour fastness to domestic and commercial laundering*

ISO 105-F09, *Textiles — Tests for colour fastness — Part F09: Specification for cotton rubbing cloth*

ISO 105-X11, *Textiles — Tests for colour fastness — Part X11: Colour fastness to hot pressing*

ISO 105-X12, *Textiles — Tests for colour fastness — Part X12: Colour fastness to rubbing*

ISO 2470-1, *Paper, board and pulps — Measurement of diffuse blue reflectance factor — Part 1: Indoor daylight conditions (ISO brightness)*

ISO 29862, *Self adhesive tapes — Determination of peel adhesion properties*

ISO 6353-2, *Reagents for chemical analysis — Part 2: Specifications — First series*

ISO 8791-5, *Paper and board — Determination of roughness/smoothness (air leak methods) — Part 5: Oken method*

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ISO/IEC 15426-1, *Information technology — Automatic identification and data capture techniques — Bar code verifier conformance specification — Part 1: Linear symbols*

ISO/IEC 15426-2, *Information technology — Automatic identification and data capture techniques — Bar code verifier conformance specification — Part 2: Two-dimensional symbols*

ISO/IEC 19762, *Information technology — Automatic identification and data capture (AIDC) techniques — Harmonized vocabulary*

ISO/IEC 60068-2-1, *Environmental testing — Part 2-1: Tests — Test A: Cold*

ISO/IEC 60068-2-6, *Environmental testing — Part 2-6: Tests — Test Fc: Vibration (sinusoidal)*

ISO/IEC 60068-2-78, *Environmental testing — Part 2-78: Tests — Test Cab: Damp heat, steady state*

ISO/IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

ISO/IEC 61000-4-2, *Electromagnetic compatibility (EMC) — Part 4-2: Testing and measurement techniques — Electrostatic discharge immunity test*

ISO/IEC 61000-4-3, *Electromagnetic compatibility (EMC) — Part 4-3: Testing and measurement techniques — Radiated, radio-frequency, electromagnetic field immunity test*

ISO/IEC 61000-4-4, *Electromagnetic compatibility (EMC) — Part 4-4: Testing and measurement techniques — Electrical fast transient/burst immunity test*

IEC CISPR 32, *Electromagnetic compatibility of multimedia equipment — Emission requirements*